AMENDMENTS TO THE CLAIMS

Please cancel claims 1, 2, 6, 7, 21, and 27–34 without prejudice, and amend claims 3–5, 8–13, 17, 20, 22–26 and 35–39, such that the status of the claims is as follows:

1–2. (Canceled)

3. (Currently amended) The solar electrolysis power co-generation system of claim [[1]] 5, wherein said solar electrolysis power source produces, compresses, and stores hydrogen gas, and wherein said hydrogen gas is provided to fuel said hydrogen-powered fuel cell.

4. (Currently amended) The solar electrolysis power co-generation system of claim [[1]] 5, wherein said inverter is a 140V 60 Hz inverter.

5. (Currently amended) A solar electrolysis power co-generation system, comprising:

a solar electrolysis power source including:

a solar panel[[,]];

a source of water;

a system controller;

a hermetically sealed compressor;

an electrolysis unit including:

an electrolyte tank for containing an electrolyte[[,]];

an electrolysis chamber including an oxygen chamber and an hydrogen chamber, wherein said electrolysis chamber is connected with said source of water, and wherein said electrolysis chamber receives water from said source of water;

a cathode located within said hydrogen chamber, wherein said cathode is connected with said solar panel creating a negative charge at said cathode;

an anode located within said oxygen chamber, wherein said anode is connected with said solar panel creating a positive charge at said anode;

a pH sensor located within said electrolysis chamber;

a water level sensor located within said electrolysis chamber;

a water fill inlet including a water fill valve, wherein said water fill inlet connects said electrolysis chamber with said source of water;

an electrolyte fill inlet and an electrolyte fill valve, wherein said electrolyte fill inlet connects said electrolyte tank with said electrolysis chamber;

an oxygen vent including an oxygen vent valve, wherein said oxygen vent connects said oxygen chamber with an outside atmosphere; and

a hydrogen vent, wherein said hydrogen vent connects said hydrogen chamber with said hermetically sealed compressor;

~~a hermetically sealed compressor,~~

a hydrogen tank~~, and~~;

a hydrogen-powered fuel cell; and

wherein said electrolysis unit is connected with said source of water and receives water from said source of water, and wherein said electrolysis unit provides electrolysis of said water and produces hydrogen gas and oxygen gas;

wherein said solar panel is connected with said electrolysis unit, and wherein said solar panel receives solar rays and provides electrical energy to said electrolysis unit;

wherein said hermetically sealed compressor is connected with said electrolysis unit, and wherein said hermetically sealed compressor receives said hydrogen gas from said electrolysis unit;

wherein said hydrogen tank is connected with said hermetically sealed compressor, and wherein said hydrogen tank receives said hydrogen gas from said hermetically sealed compressor;

wherein said system controller is connected with said solar panel, said electrolysis unit, said hermetically sealed compressor, and said hydrogen tank; and

wherein said fuel cell is connected with said hydrogen tank, and wherein said fuel cell receives said hydrogen gas from said hydrogen tank; and

a control unit including an inverter, a microprocessor, and a modem, wherein said microprocessor is connected with said modem, said inverter, and said hydrogen-powered fuel cell, wherein said inverter is connected with said hydrogen-powered fuel cell, and wherein said microprocessor controls said inverter and said hydrogen-powered fuel cell;

wherein said inverter is connected with a power grid that is monitored and controlled by a local power utility, wherein said inverter is connected with an individual consumer, and wherein said microprocessor is linked to said local power utility through said modem.

6–7. (Canceled)

8. (Currently amended) The solar electrolysis power co-generation system of claim [[6]] 5, wherein said hydrogen tank comprises:

a hydrogen tank fill valve, wherein said hydrogen tank fill valve is located between said hermetically sealed compressor and said hydrogen tank;

a hydrogen tank output valve, wherein said hydrogen tank output valve is located between said hydrogen tank and said fuel cell; and

a pressure gauge, wherein said pressure gauge indicates ~~the~~ a pressure of said hydrogen gas stored inside said hydrogen tank.

9. (Currently amended) The solar electrolysis power co-generation system of claim [[6]] 5, wherein said solar electrolysis power source further comprises a data and control bus, wherein said data and control bus connects said system controller with said pH sensor, said water level sensor, said water fill valve, said electrolyte fill valve, said oxygen vent valve, and said hermetically sealed compressor.

10. (Currently amended) The solar electrolysis power co-generation system of claim [[7]] 5, wherein said electrolyte is added to said water contained within said electrolysis chamber creating a pH value between 6 and 7.

11. (Currently amended) The solar electrolysis power co-generation system of claim [[6]] 5, wherein said electrolyte is sulfuric acid.

12. (Currently amended) The solar electrolysis power co-generation system of claim [[6]] 5, wherein said water source is a water tank holding water.

13. (Currently amended) A solar electrolysis power co-generation system, comprising:

a solar electrolysis power source including[[;]]:

a water tank holding water;

an electrolysis unit, wherein said electrolysis unit is connected with said water tank and receives said water from said water tank, wherein said electrolysis unit provides ~~the~~ electrolysis of said water and produces hydrogen gas and oxygen gas, and wherein said electrolysis unit comprises:

an electrolysis chamber including an oxygen chamber and a hydrogen chamber, wherein said electrolysis chamber is connected with said water tank and wherein said electrolysis chamber receives water from said water tank;

a cathode located within said hydrogen chamber;

an anode located within said oxygen chamber;

a pH sensor located within said electrolysis chamber;

a water level sensor located within said electrolysis chamber;

a water fill inlet including a water fill valve, wherein said water fill inlet connects said electrolysis chamber with said water tank;

an electrolyte tank containing an electrolyte and including an electrolyte fill inlet and an electrolyte fill valve, wherein said electrolyte fill inlet connects said electrolyte tank with said electrolysis chamber;

an oxygen vent including an oxygen vent valve, wherein said oxygen vent connects said oxygen chamber of said electrolysis chamber with ~~the~~ an outside atmosphere; and

a hydrogen vent;

a solar panel, wherein said solar panel is connected with said electrolysis unit via the anode and the cathode, and wherein said solar panel receives solar rays and provides electrical energy to said electrolysis unit by creating a negative charge at the cathode and a positive charge at the anode;

a hermetically sealed compressor, wherein said hermetically sealed compressor is connected with the hydrogen vent of said electrolysis unit and wherein said hermetically sealed compressor receives said hydrogen gas from said electrolysis unit;

a hydrogen-powered fuel cell, wherein said fuel cell is connected with said hydrogen tank, and wherein said fuel cell receives said hydrogen gas from said hydrogen tank;

a hydrogen tank, wherein said hydrogen tank is connected with said hermetically sealed compressor, wherein said hydrogen tank receives said hydrogen gas from said hermetically sealed compressor, and wherein said hydrogen tank comprises:

a hydrogen tank fill valve, wherein said hydrogen tank fill valve is located between said hermetically sealed compressor and said hydrogen tank;

a hydrogen tank output valve, wherein said hydrogen tank output valve is located between said hydrogen tank and said fuel cell; and

a pressure gauge, wherein said pressure gauge indicates ~~the~~ pressure of said hydrogen gas stored inside said hydrogen tank;

an AC power source;

a system controller, wherein said system controller is connected with said solar panel, said AC power source, said electrolysis unit, said hermetically sealed compressor, and said hydrogen tank;

a data and control bus, wherein said data and control bus connects said system controller with said pH sensor, said water level sensor, said water fill valve, said electrolyte fill valve, said oxygen vent valve, said hydrogen tank fill valve, said hydrogen tank output valve, said pressure gauge of said hydrogen tank, and said hermetically sealed compressor;

a control unit including an inverter, a microprocessor, and a modem, wherein said microprocessor is connected with said modem, said inverter, and said hydrogen-powered fuel cell, wherein said inverter is connected with said hydrogen-powered fuel cell, and wherein said microprocessor controls said inverter and said hydrogen-powered fuel cell; and

wherein said inverter is connected with a power grid that is monitored and controlled by a local power utility, wherein said inverter is connected with an individual consumer, and wherein said microprocessor is linked to said local power utility through said modem.

14. (Original) The solar electrolysis power co-generation system of claim 13, wherein said hydrogen-powered fuel cell provides power to a local power grid.

15. (Original) The solar electrolysis power co-generation system of claim 13, wherein said hydrogen-powered fuel cell provides power to an individual consumer having an electrical load.

16. (Original) The solar electrolysis power co-generation system of claim 15, wherein said individual consumer is a house.

17. (Currently amended) The solar electrolysis power co-generation system of claim 13, wherein said oxygen gas is vented through said oxygen vent valve to the outside atmosphere.

18. (Original) The solar electrolysis power co-generation system of claim 13, wherein said oxygen is collected in said oxygen chamber of said electrolysis chamber.

19. (Original) The solar electrolysis power co-generation system of claim 13, wherein said hydrogen is collected in said hydrogen chamber of said electrolysis chamber.

20. (Currently amended) The solar electrolysis power co-generation system of claim 13, wherein ~~the~~ a pH value of said water contained in said electrolysis chamber is maintained between 6 and 7 by adding said electrolyte from said electrolyte tank.

21. (Canceled)

22. (Currently amended) The solar electrolysis power co-generation system of claim [[21]] 13, wherein said microprocessor receives a first signal from said local power utility through said

modem and starts ~~the~~ operation of said hydrogen-powered fuel cell, and wherein said hydrogen-powered fuel cell provides electrical power to said local power grid via said inverter.

23. (Currently amended) The solar electrolysis power co-generation system of claim [[21]] 13, wherein said microprocessor receives a second signal from said local power utility through said modem and shuts down ~~the~~ operation of said hydrogen-powered fuel cell.

24. (Currently amended) The solar electrolysis power co-generation system of claim [[21]] 16, wherein said microprocessor receives a third signal from said local power utility through said modem and shifts said electrical load of said house from said local power grid to said hydrogen-powered fuel cell.

25. (Currently amended) The solar electrolysis power co-generation system of claim [[21]] 16, wherein said control unit disconnects said inverter from said local power grid, wherein said control unit starts the operation of said hydrogen-powered fuel cell, and wherein said hydrogen-powered fuel cell provides power to said house.

26. (Currently amended) The solar electrolysis power co-generation system of claim [[21]] 16, wherein said microprocessor receives a fourth signal from said local power utility through said modem and shifts said electrical load of said house from said hydrogen-powered fuel cell to said local power grid.

27–34. (Canceled)

35. (Currently amended) The solar electrolysis power co-generation system of claim [[27]] 5, wherein the pH sensor is positioned between the hydrogen chamber and the oxygen chamber.

36. (Currently amended) The solar electrolysis power co-generation system of claim [[1]] 5, wherein the pH sensor allows a system controller to monitor and control a pH of the water in the electrolysis chamber.

37. (Currently amended) The electrolysis power co-generation system of claim [[29]] 36, wherein the system controller controls the pH by triggering the release of ~~an~~ the electrolyte ~~from an electrolyte chamber~~ into the electrolysis chamber.

38. (Currently amended) The solar electrolysis power co-generation system of claim [[21]] 13, wherein the water level sensor allows a system controller to monitor and control a level of the water in the electrolysis unit.

39. (Currently amended) The electrolysis power co-generation system of claim [[31]] 38, wherein the system controller controls the level of the water in the electrolysis chamber by triggering the release of additional water from [[a]] the water tank into the electrolysis chamber.

40. (Previously presented) The solar electrolysis power co-generation system of claim 9, wherein the data and control bus connects the system controller with the hydrogen tank fill valve, the hydrogen tank output valve, and the pressure gauge of the hydrogen tank.